

WISCONSIN NATURAL RESOURCES CONSERVATION SERVICE
Wetland Determination Methods – State Guidance

12/18/2016

For the Food Security Act of 1985, as amended
(7 CFR Part 12, Subpart C, §12.30)

**Wisconsin Natural Resources Conservation Service
Wetland Determination Methods – State Guidance (WWDM)**

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SECTION 1: INTRODUCTION

1.0 INTRODUCTION

The 1985 Food Security Act, as amended, (FSA) requires producers participating in most USDA programs to comply with the Wetland Conservation (WC) compliance provisions at 7 CFR Part 12. The 2014 Farm Bill re-linked the WC compliance provisions to crop insurance premium subsidies. To remain eligible for USDA program benefits, producers must not plant an agricultural commodity on a wetland converted after December 23, 1985, or convert a wetland to make possible the production of an agricultural commodity after November 28, 1990. The NRCS assists producers with meeting their WC compliance responsibilities by issuing certified wetland determinations. Certified wetland determinations identify the location of wetlands on their land and the scope of protection that must be provided in order for a producer to maintain eligibility for USDA program benefits.

The National Food Security Act Manual (NFSAM) provides internal agency policy related to the Highly Erodible Land Conservation and Wetland Conservation provisions of the 1985 Food Security Act. Part 514.7 of the NFSAM explains that the FSA wetland determination process requires a technical determination of whether or not the site (sampling unit(s)) is a wetland, then a separate independent determination of whether or not any exemptions to the provisions apply. Based on these two decisions, a certified wetland determination map is prepared with an appropriate WC label assigned to each sampling unit (sampling units may be combined). The size of each area with a WC label is provided. Thus, the FSA wetland determination decision includes three independent steps: Step 1: Wetland Identification, Step 2: Assignment of WC Labels and Step 3: Sizing.

To accomplish the first step (wetland identification), the Secretary of Agriculture directed the Natural Resources Conservation Service (NRCS) to develop and utilize offsite and onsite wetland identification procedures (7 CFR 12.30(a) (4)). The NRCS responded by providing such procedures in the NFSAM. The Circular No 6, NFSAM, Part 527, Appendix (henceforth known as “FSA Wetland Identification Procedures”) directs that NRCS will utilize Paragraph 23 and Part IV: Methods contained in the Corps of Engineers Wetland Delineation Manual (Corps Manual) for onsite and offsite determinations. The NFSAM explains that the onsite and offsite procedures contained in the Corps Manual are supplemented by the Corps Regional Supplements and the FSA variances to the Corps Methods, as provided in the FSA Wetland Identification Procedures.

The FSA Wetland Identification Procedures (Paragraph 2-14) provide that the Corps offsite procedures found in Part IV, Section D, Subsection 1 – Onsite Inspection Unnecessary can be augmented with the development of State Offsite Methods which is incorporated into this document.

The Wisconsin NRCS presented the Wisconsin Natural Resources Conservation Service Wetland Determination Methods – State Guidance (WWDM) to the State Technical Committee and will be posted for notice and comment in the Federal Register to solicit feedback and recommendations as required in paragraph (2-14) of the FSA Wetland Identification Procedures. These WWDM take into account unique regional, state, and local wetland characteristics. This document adheres to regulations and policies in effect as of the date of this document but may be subject to change.

In Wisconsin, the Wisconsin NRCS Wetland Determination Methods – State Guidance (WWDM) will replace the “WISCONSIN WETLAND MAPPING CONVENTIONS USDA, NATURAL RESOURCES CONSERVATION SERVICE” dated May 1, 1998.

1.2 REFERENCE DOCUMENTS

The Wisconsin NRCS Wetland Determination Methods – State Guidance document incorporates by reference the current versions and pertinent sections of the following documents:

1. National Food Security Act Manual (NFSAM)
2. Food Security Act (FSA) Wetland Identification Procedures (NFSAM Part 514.8)
3. 1987 United States Army Corps of Engineers (USACE) Wetland Delineation Manual, Technical Report Y-87-1 (Corps Manual)
4. USACE Regional Supplements (Northcentral/Northeast (NC/NE) and Midwest) to the Corps Manual
5. Title 210 Engineering, National Engineering Handbook (NEH), Part 650, Engineering Field Handbook (EFH), Chapter 19 - Hydrology Tools for Wetland Determination
6. Wisconsin Supplement to the NRCS Engineering Field Handbook, Chapter 19 (WI 650.1905 Scope and Effect Equations, EFH Notice 210-WI-121, January 2011) (NRCS Estimate of Lateral Effect for Constructed Drainage Features in Agricultural Fields for use in Wetland Determinations under the USDA Farm Bill).
7. Title 7, Part 12 of the Code of Federal Regulations (CFR)

1.3 DEFINITIONS

Wetland:

For FSA purposes, the term “wetland” is defined in 16 U.S.C. section 3801(a) (27) as land that—

- A) Has a predominance of hydric soils.
- B) Is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.
- C) Under normal circumstances supports a prevalence of such vegetation.

For the purposes of FSA and any other act, this term does not include lands in Alaska identified as having high potential for agricultural development that have a predominance of permafrost soils.

According to paragraph (3-2) of the FSA Wetland Identification Procedures, *“This definition is unique to the statute, and all decisions regarding the identification of FSA wetlands must be based on this definition. The statute adds further clarity to the concept of an FSA wetland by defining “hydric soil” and “hydrophytic vegetation” (as those concepts will be applied to the WC provisions) and by the specific direction given to the Secretary as to the hydric soils and hydrophytic vegetation criteria that must be developed by USDA (16 U.S.C. Section 3801(b) (1)).”*

Normal Circumstances:

Wetland identification decisions are based on conditions that are expected to occur under Normal Circumstances. The FSA Wetland Identification Procedures paragraph (2-10) defines Normal Circumstances (NC) as, *“The soil and hydrologic conditions that are normally present, without regard to whether the vegetation has been removed (7 CFR section 12.31(b) (2) (i)).”*

For FSA wetland identification purposes, this concept is the consideration of normal and abnormal climate-based site changes and natural and artificial disturbance-based site changes that can create wetland identification challenges. “Normally present” is further explained as the vegetative, soil, and hydrologic conditions that occur under both of these conditions:

- a. Without regard to whether the site has been subject to drainage actions (see drainage definition) after December 23, 1985, and without regard to whether the vegetation has been removed or significantly altered.*
- b. During the wet portion of the growing season under normal climatic conditions (normal environmental conditions).”*

The FSA Wetland Identification Procedures paragraph (2-11) defines Normal Environmental Conditions (NEC) as. *“The climate-based concept of NC, defined as the physical conditions, characteristics (hydrology, soil, and vegetation), or both that would exist in a typical situation (2-12) on a site during the wet portion of the growing season in a normal climatic year.”*

Normal Circumstances as used in the FSA wetland definition requires that decisions be based not on anomalies, but rather what would normally occur on the sampling unit during NEC (FSA Wetland Identification Procedures paragraph (3-3)). In the Corps methods, the concept of “normal” is separated into the disturbance-based concept of normal circumstances (typical/atypical situations) and the climate-based concept of normal circumstances called “normal environmental conditions” (NEC). The NRCS adopts this concept that a determination of “normal” is a two-pronged consideration (FSA Wetland Identification Procedures paragraph (3-4)). Directly following 3-4, FSA Wetland Identification Procedures paragraph 3-5 states: For FSA purposes the agency expert will determine the normal circumstances (NC) of the sampling unit as those that would be expected to occur,

- (1) In the absence of post-12/23/1985 drainage actions that alter the normal soil or hydrologic conditions.
- (2) In the absence of an alteration (removal or change) in the plant community such that a decision cannot be made if the site would support a prevalence of hydrophytic vegetation if undisturbed.
- (3) During the wet portion of the growing season during a year experiencing normal weather patterns.

Wetland Indicators:

In the absence of direct evidence, the decision if a sampling unit meets a particular diagnostic factor (wetland hydrology, prevalence of hydrophytic vegetation, and a predominance of hydric soils) is assisted by confirmation of the presence of indicators. The use of indicators to predict the conditions that would occur under NC is referred to as the “indicator-based approach to wetland identification.” Indicators can be obtained from remote sensed data sources or onsite visits.

The Corps, EPA, and NRCS utilize the indicator-based approach to assist in decision-making. The ultimate decision if a site meets the FSA criteria for any of the three diagnostic factors is made from a preponderance of evidence, best professional judgment, and the FSA definitions, criteria, or both, of hydrophytic vegetation, hydric soils, and wetland hydrology (FSA Wetland Identification Procedures paragraph (4-3)).

According to Paragraph (4-4) of the FSA Wetland Identification Procedures, *“The decision if the site is an FSA wetland is ultimately rendered based on the determination of a presence or*

absence of each of the three factors under NC. Areas determined to support wetland hydrology, a prevalence of hydrophytic vegetation, and a predominance of hydric soils (all under NC), as each factor is defined by the FSA, are wetlands subject to the WC provisions of the act."

SECTION 2: WETLAND IDENTIFICATION

2.0 FSA WETLAND DETERMINATION PROCESS STEP 1: WETLAND IDENTIFICATION

Wetland determinations are technical decisions resulting from the determination of whether or not an area is a wetland (wetland ID) including a determination of the appropriate wetland type (WC compliance label) and size (FSA Wetland Identification Procedures paragraph (2-18)). Therefore, the NRCS identifies three unique and separate steps to the wetland determination process. Within the first two steps each of the three wetland diagnostic factors must be assessed independently to determine if a decision can be rendered at the diagnostic factor level using offsite data sources.

As a reminder, the first step in the wetland identification process is to subdivide the project into different areas called sampling units (FSA Wetland Identification Procedures (2-12)) and identify each sampling unit on a base map. Then for each sampling unit, an independent consideration of each of the three wetland diagnostic factors is made. For each sampling unit the agency expert must decide when applying Section C: Selection of Method of the Corps Manual which level is most appropriate.

Selection of "Section D – Routine Determinations, Subsection 1 – Onsite Inspection Unnecessary," procedures are not likely to occur in an actively cropped sampling unit. Within the agriculture landscape, sometimes decisions are rendered when one or more factor is either atypical (Section F) or climatically challenged (Section G). Therefore, agency experts often utilize "Section D – Routine Determinations, Subsection 2 – Onsite Inspection Necessary," procedures supplemented with the methods provided in Section F, G, and/or Chapter 5 of the Regional Supplements.

The agency expert selects the most appropriate method(s) to identify wetlands. This decision is not made at the project (USDA tract/field) scale; rather for each sampling unit identified and delineated on the wetland identification base map. The agency expert retains the sole responsibility to determine the level of routine determination (Section D, Subsection 1, Subsection 2, or Subsection 3), and if Sections F or G will be utilized.

NOTES:

- All agency decisions during Step 1 are made at the sampling unit level.
- The term "imagery" refers to all forms of remotely captured imagery or photography, digital or analog, at all resolutions.
- Unless otherwise stated, the use of "1985" in this document refers to December 23, 1985 the date that the Wetland Conservation provisions of the Food Security Act of 1985, as amended was enacted.

- A single resource document (tool) can contain multiple data sources. Each data source can be used as an indicator for a different factor. For example, a soil survey contains multiple data sources (hydrology data, vegetative data, use limitation data, etc.). A quadrangle map is a source for elevation data, land use data, and hydrology data (i.e. water symbols). While a single resource document can be used for more than one factor, the mandate is that a single remote data source (i.e. hydrology data) cannot be applied to more than one factor.

2.1 DEVELOP A BASE MAP

The agency expert must utilize preliminary data gathering and synthesis in determining whether a typical or atypical situation exists (FSA Variance 5-9). The Corps Manual, “Section B (Preliminary Data Gathering and Synthesis)”, Step 2; and “Section D, Routine Determination, Subsection 2 – Onsite Inspection Necessary,” Step 1 and Step 4, require the agency expert to identify the project area, make a base map, and identify sampling units.

2.1.1 Information supplementing the Corps Manual and FSA variances:

- Users will graphically subdivide the project into sampling units on a base map image using resources A through F (as available) below as indicated.
- The base map needs to be large enough to read and record multiple sampling units in one location (e.g. concentric circles).
- A sampling unit will only be recorded on the base map once.
- Whenever possible the sampling unit boundary from resource B will be used, but can be adjusted using other resources, e.g. LiDAR.
- The agency expert determines sampling unit validity.
- Sampling units will be located using the following remote resources:
 - A. Review the NRCS Wisconsin Wetland Inventory Maps **OR** official (non-certified) determinations, if available. Each previously identified polygon may be a sampling unit.
 - B. Based on knowledge of local conditions, review the appropriate (see below) imagery and at least one year of recent orthophotography. Each signature listed below not matching resource A above may be a sampling unit:
 - Hydrophytic vegetation
 - Surface water
 - Saturated conditions
 - Flooded or drowned-out crops
 - Stressed crops due to wetness
 - Differences in vegetation due to different planting dates
 - Inclusions of wet areas as set-aside or idled land
 - Circular or irregular areas of unharvested crops within a harvested field
 - Isolated areas that are not farmed with the rest of the field
 - Areas of greener vegetation (especially during dry years)

Note: The term “appropriate” means that the agency expert will select the imagery year or years that best represents Normal Circumstances, including “Normal Environmental Conditions”, to identify and size sampling units.

For sampling units without pre-1985 manipulations, additional resources from C, D and F can be used.

Sampling units will be recorded on a base map using the imagery year which best reflects Normal Environmental Conditions. The agency expert will document the imagery year used for the base map on the map.

For sampling units with pre-1985 manipulations, to determine best drained conditions, the agency expert must determine and utilize imagery which reflects Normal Circumstances with consideration of when the manipulation was installed and the best drained condition of the sampling unit. The agency expert must review imagery years immediately following the approximate manipulation year and/or use other resources such as producer submitted drainage worksheets, drainage equations, watershed district maps, road culvert elevations and/or county drainage maps to determine the presence of sampling units and their size. The agency expert will document the reference and/or imagery year used to determine Normal Circumstances. Drainage manipulations and their approximate year of installation will be identified on the on the WWDM data sheet (page 1) in the Manipulation column across from the appropriate sampling unit and on the slide review page (page 2) of the appropriate sampling unit in the year it was found, or in the hydrology section of the appropriate ACOE Supplement data form.

- C. Review the Wisconsin Department of Natural Resources (DNR) Wetland maps and/or National Wetland Inventory (NWI) maps online. Each polygon not matching the above resources may be a sampling unit.
- D. Review the soil survey hydric soils list on Web Soil Survey. Identify listed hydric soil map units, map units with hydric soils as part of their name and soils with hydric inclusions. Each polygon not matching the above resources may be a sampling unit.
- E. Review soil survey point (spot symbol) data. Each soil survey point feature not matching the above resources may be a sampling unit. (i.e.: Wet spot, Marsh spot, or Depressional spot)
- F. Review other inventory tools, including other years of normal imagery and LiDAR if available. Note sampling units as applicable.
- G. Identify at least one suspected non-wetland (upland) sampling unit for each project area (tract or field).

2.1.2 Information supplementing All Sections in the Corps Manual

- A single Representative Observation Points (ROP) will be identified for each sampling unit.
- The ROP's will be located in the most representative area of the sampling unit.
- Factor indicators (remote or field) must be identified in the approximate ROP location and Flexibility Paragraph 23 may be invoked.

State Procedure:

When determining the number and locations of sampling units (defined in FSA paragraph (2-12)) the agency expert will utilize desktop (in the office) methods to meet the intent of "traversing the area" and will not be required to identify sampling units in the field.

- Proceed to the next section.

2.2 HYDROPHYTIC VEGETATION

The term hydrophytic vegetation “means a plant growing in (A) water; or (B) a substrate that is at least periodically deficient in oxygen during a growing season as a result of excessive water content” (16 U.S.C. section 3801(a)(13)). The site must support a prevalence of hydrophytic vegetation under normal circumstances in order to meet the vegetation factor. Refer to Part V, subpart C, paragraphs (5-41) through (5-48), of the FSA Wetland Identification Procedures for further information and allowable variances to the Corps methods in identification of hydrophytic vegetation.

The following data sources may be used to indicate that the hydrophytic vegetation definition (plants growing in water or growing in a reduced substrate) is met. In addition to the use of the data sources below, the atypical procedures found in the Corps Manual and Chapter 5 Problematic Vegetation Procedures of the appropriate Regional Supplement to the Corps Manual can be used. The use of Reference site data may also be used in this step to confirm the hydrophytic vegetation definition is met.

1. Ecological Site Descriptions (ESD). **Refer to Attachment A.**
2. Approved NRCS wetland reference site data in the same MLRA.
3. Wisconsin DNR Wetland maps and/or National Wetland Inventory (NWI) maps.
4. Official Soil Series Descriptions (OSD). **Refer to Attachment B.**
5. Prior land-based (on the ground) photography.

Hydrophytic Vegetation (no pre-1985 drain) Decision Threshold (the factor is met if):

1. ESD – the Historic Plant Community (or Reference Community) plant composition table indicates the sampling unit is composed of plants that meet the definition (Prevalence Index (PI) < 3.0). Refer to Attachment A for further information.
2. Approved WI NRCS wetland reference sites that are located within the same named soil map unit (or inclusion), in the same Major Land Resource Area, and have similar precipitation zones. The selected reference site case file documentation indicates the sampling unit is composed of plants that meet the definition (PI < 3.0).
3. NWI Mapping – mapped as emergent, shrub vegetation, forested, or aquatic bed on an NWI map (e.g. PEM, PSS, PFO, or PAB).
4. Wisconsin DNR Mapping – mapped as aquatic bed, emergent/wet meadow, scrub/shrub, forested (e.g. E2Kf, E1Kw, S3Ka, or T2Ka).
5. OSD – Use this only if ESD information is not available. 1) Use and Vegetation indicates the site has plants that meet the hydrophytic vegetation definition (i.e. states “species tolerant of excessive wetness”) and/or 2) Species listed meet any vegetation indicator from the appropriate Corps Regional Supplement. All species listed are considered dominant for purposes of the vegetation indicator(s) from the appropriate Corps Regional Supplement.

6. Prior land-based (on the ground) photography – At least 2 sources/dates show plants growing in water under NC.

➤ Document the decision on the worksheet. **If no decision can be made a site visit will be required. Proceed to Section 2.3.**

Hydrophytic Vegetation (with pre-1985 drain) Decision Threshold (the factor is met if):

This decision threshold can only be applied to sampling units if remote indicators of hydric soil and wetland hydrology are present (or are absent due to disturbance or other problem situations such as “Wetlands that Periodically Lack Indicators of Wetland Hydrology”). Therefore, ***proceed to Section 2.3 and Section 2.4 before determining this factor.***

The agency expert must verify that the sampling unit is in a landscape position that is likely to collect or concentrate water (refer to Regional Supplement Chapter 5 – Problematic Hydrophytic Vegetation Procedure). The landscape position does not include the ditch itself, if applicable. If the drain no longer allows the sampling unit to “collect or concentrate water” then this factor cannot be met.

1. The Corps Methods, Regional Supplement Chapter 5 – Problematic Hydrophytic Vegetation Procedure “[NC/NE – (4) (c); Midwest – (4) (c)] Areas affected by grazing,” approach (4) can be used.
 - Approach (4) states, *“If an appropriate ungrazed area cannot be located or if the ungrazed vegetation condition cannot be determined, make the wetland determination (Step 1) based on indicators of hydric soils and wetland hydrology.”*
2. The Corps Methods, Regional Supplement Chapter 5 – Problematic Hydrophytic Vegetation Procedure “[NC/NE – (4) (d); Midwest – (4) (d)] Managed plant communities,” approach (4) or (5) is used.
 - Approach (4) NC/NE, (5) Midwest states, *“If the unmanaged vegetation condition cannot be determined, make the wetland determination (Step 1) based on indicators of hydric soils and wetland hydrology.”*
3. Prior land-based (on the ground) photography – At least 2 sources/dates show plants growing in water under NC.

Document the decision on the worksheet. **If no decision can be made a site visit will be required and proceed to Section 2.5. Otherwise proceed to Section 2.6.**

2.3 HYDRIC SOILS

The term “hydric soil” means soil that, in its undrained condition, is saturated, flooded, or ponded long enough during a growing season to develop an anaerobic condition that supports the growth and regeneration of hydrophytic vegetation” (16 U.S.C. section 3801(a) (12)). Refer to Part V, subpart C, paragraphs 5-49 through 5-55, of the FSA Wetland Identification Procedures for further information and allowable variances to the Corps methods.

Title 7 CFR § 12.31(a) (1) states, “NRCS shall identify hydric soils through the use of published soil maps which reflect soil surveys completed by NRCS or through the use of onsite reviews.”

Title 7 CFR § 12.31(a) (2) states, “NRCS shall determine whether an area of a field or other parcel of land has a predominance of hydric soils that are inundated or saturated as follows:”

- “If a soil map unit has hydric soil as all or part of its name, that soil map unit or portion of the map unit related to the hydric soil will be determined to have a predominance of hydric soils.” **Refer to Attachment B.**
- “If a soil map unit is named for a miscellaneous area that meets the criteria for hydric soils (i.e., riverwash, beaches, marshes, or water) the soil map unit shall be determined to have a predominance of hydric soils.” **Refer to Attachment B.**
- “If a soil map unit contains inclusions of hydric soils, that portion of the soil map unit identified as hydric soil shall be determined to have a predominance of hydric soils.” **Refer to Attachment B.**

The following remote indicators are suggestive (indicates) that the hydric soils definition is met.

1. Soils Maps (data) and County Hydric Soils Lists.
 - A soil survey area or site-specific hydric soil list can be generated from the reports in Web Soil Survey.
 - County Soil hydric lists are in section II of the Electronic Field Office Technical Guide.

Hydric Soils Decision Threshold (the factor is met if):

1. The sampling unit meets 7 CFR § 12.31(a) (2) as described above. If a soil map unit has hydric soil as part of its name or contains a hydric inclusion, that portion of the hydric component (major or minor) in the soil survey can be verified by either:
 - a. Identifying that the landform (such as pothole or swale) of the sampling unit is consistent with the landform (such as closed depression or swale) of the hydric component or inclusion.
 - If a field visit based on offsite evidence is required for a map unit that is non-hydric, including minor components, then field hydric soil indicator documentation is required.
- Document the decision on the worksheet using FSA Variance 5-54. **If there is no hydrophytic vegetation AND no hydric soil then the SU does not meet the hydric soils definition. Proceed directly to Section 2.6. If EITHER hydrophytic vegetation or hydric soils are Yes, then proceed to Section 2.4.**

2.4 WETLAND HYDROLOGY

Wetland hydrology criterion is defined in the FSA Wetland Identification Procedures Part V, subpart C, paragraph (5-59): “The FSA wetland hydrology criterion is derived from the statutory wetland definition as: Under NC the site would be inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation”.

Refer to Part V, subpart C, paragraphs (5-56) through (5-62), of the FSA Wetland Identification Procedures for further information and allowable variances to the Corps methods.

The saturation indicators as discussed below are indicative of soils having groundwater within 12 inches of the soil surface within the sampling unit. Inundation is defined as the presence of surface water at any depth within the sampling unit.

The following remote indicators are suggestive (indicates) that the wetland hydrology definition is met:

1. Imagery showing surface water inundation (INU) by ponding or flooding under NC. The “INU” hydrology signatures are listed in the remote sensing methods. **Refer to Attachment C.**
2. Imagery showing a Color Tone difference (CT) due to wetness that is reflective of NC that: a) was occurring on the date of the imagery, or b) that occurred previous to the imagery but the evidence of this wetting event remains evident. A “CT” is any hydrology signature listed in the remote sensing methods. **Refer to Attachment C.** Color tones provide clear distinctions in the condition of the sampling unit compared to the condition in the surrounding field including size and color. Color tones include:
 - Hydrophytic vegetation
 - Saturated conditions
 - Stressed crops due to wetness
 - Differences in color tone
 - Differences in vegetation due to different planting dates
 - Inclusions of wet areas as set-aside or idled land
 - Circular or irregular areas of unharvested crops within a harvested field
 - Isolated areas that are not farmed with the rest of the field
 - Areas of greener vegetation (especially during dry years)

Users are advised that sampling units and wetness signatures in field(s)/tract(s) with perennial vegetative cover may not be readily visible. In such cases, ***field verification is required.***

Wetland Hydrology (no pre 1985 drainage) Decision Threshold (the factor is met if):

1. Wetness signatures are found on 50 percent or greater of imagery reviewed.
 - The imagery review will consist of 5 to 15 normal precipitation years as identified through use of the National Weather Service Climate Station Rainfall Normalization Tables (WETS) as detailed in Attachment C. If at least 5 normal precipitation years are not available then add an equal number of wet and dry precipitation years until a minimum of five years are obtained. Select wet and dry precipitation years that are nearest to the normal range. Do not select wet and dry precipitation years that are extremes. Wetness signature abbreviations include INU (Inundation) and CT (Color Tone difference). If an image is of poor quality such that wetness signatures are not discernable, those image years can be excluded.
 - If a post-1985 conversion (e.g. ditch) is observed then the wetness signature review period will start from the year of conversion and include all available prior year imagery.
- Document the decision on the worksheet and proceed to section 2.6. **If no decision can be made a site visit will be required and proceed to Section 2.5.**

Wetland Hydrology (with pre-1985 drainage) Decision Threshold (the factor is met if):

- The agency expert will make the hydrology decision within the context of FSA Variance (5-9). The supplemental information provided below explains how the agency expert utilizes FSA Variance (5-9).

- The agency expert must determine Normal Circumstances in consideration of when the manipulation was installed and the best drained conditions of the sampling unit.
 - To determine the best drained conditions, the agency expert must review any available imagery years, regardless of “slide indicator status”, following the pre-1985 drainage manipulation year through 1985 or further, if necessary. Consideration of years after 1985 may be needed when the manipulation was installed in the years immediately preceding 1985.
 - The agency expert must consider lack of maintenance (e.g., tile blowout) and recent maintenance when reviewing imagery.
1. If the sampling unit exhibits a wetness signature, as identified in 2.4, 1. (IND) and/or 2. (CT) above, on the normal year image that best represents best drained condition it will be determined to support wetland hydrology.
 2. If a normal year image is not available within the appropriate time period, the lack of a wetness signature on a wet year will be considered proof of a negative for wetland hydrology.
- Document the decision on the worksheet and proceed to section 2.6. **If no decision can be made a site visit will be required and proceed to Section 2.5.**

☒ **When a decision for any of the 3 wetland diagnostic factors cannot be made using offsite procedures, a site visit will be required.**

2.5 SITE VISIT REQUIRED

A site visit is required due to a potential wetland violation (before USDA benefits can be denied), when a determination is appealed, or when a wetland diagnostic factor cannot be determined using offsite methods.

(Refer to the FSA Wetland Identification Procedures for further information and allowable variances to the Corps methods that should be documented on the Data Form(s) when a site visit is conducted.)

Reminder: When a site visit is needed, Sections 2.2 to 2.4 of this document can be used for one or more of the wetland diagnostic factors. The site visit may only apply to the factor in question that the offsite method could not confirm. The site visit may be conducted to only confirm the findings of the offsite procedures in Sections 2.2 to 2.4, or it may be determined that the onsite procedures from the Corps Manual are needed for one or more factors or sampling units.

2.6 FINALIZATION OF THE BASE MAP

The agency expert will analyze the findings from Steps 2.2, 2.3, 2.4, and/or onsite data/findings to perform the following:

- If all three factor answers are yes (the factors are met) for a sampling unit then record a “Y” (Yes) on the base map for the sampling unit.
- If any factor answer is no (a factor is not met) for a sampling unit then record an “N” (No) on the base map for the sampling unit.

- Combine (using linking symbol “j”) adjacent sampling units with the same labels (Y or N).
- Provide a copy of the final base map to the case file.
- This final base map will be used to complete Section 3 and Section 4.

SECTION 3: ASSIGNMENT OF WC LABELS

3.0 FSA WETLAND DETERMINATION PROCESS STEP 2: ASSIGNMENT OF WC LABELS

Sampling units identified as a “Y” (wetland) or “N” (non-wetland) in Section 2 will be assigned the appropriate WC compliance label after completing Sections 3.1 through 3.5 below and applicable portions of the Data Form if a site visit or onsite determination was completed. Exemptions that apply will be determined by using the most current version of the NFSAM.

3.1 VERIFICATION OF PRE- 1985 CROPPING HISTORY

The following are suggestive (indicates) that pre-1985 cropping history (“an agricultural commodity was produced at least once before 1985” (7 CFR 12.2)) is met.

1. Imagery (pre-1985) shows cropping.
2. Farm Service Agency records indicate pre-1985 cropping history (crop must have been planted – does not include other records such as prevent plant) and imagery concurs.
3. Producer provided documentation such as pre-1985 photographs, crop history records and imagery concurs.

Cropping History Decision Threshold (the factor is met if):

1. Pre-1985 cropping history meets any of the three indicators.
- Document decision on the worksheet and proceed to the next section.

3.2 VERIFICATION OF PRE-DECEMBER 23, 1985 MANIPULATION(S)

Manipulations are defined as an activity that drains, dredges, fills, levels, or otherwise manipulates (including the removal of woody vegetation or any activity that results in impairing or reducing the flow and circulation of water) for the purpose of or to have the effect of making possible the production of an agricultural commodity.

Responsibility to provide evidence (7 CFR 12.5(b)(7)) states, *“It is the responsibility of the person seeking an exemption related to converted wetlands under this section to provide evidence such as receipts, crop-history data, drawings, plans or similar information, for purposes of determining whether the conversion or other action is exempt in accordance with this section.”* All readily-available evidence should be considered, however **it is not the NRCS’ responsibility to search for evidence; rather, it is the NRCS responsibility to see if the producer provided records can be confirmed.**

The following remote indicators are suggestive (indicates) that pre-1985 manipulation(s) have occurred.

- 1986 or earlier aerial photography showing a manipulation(s).

- Pre-1985 NRCS records showing a verified manipulation(s).
- Pre-1985 land-based photographs showing a manipulation (e.g. tile inlet/outlet, drainage ditch).
- Imagery confirms no woody vegetation as of 12/23/1985 AND the sampling unit is on a soil and/or landform that historically supported native woody vegetation (e.g. woody vegetation is native to the ESD/OSD).

Pre-1985 Manipulation Decision Threshold (the factor is met if):

1. The manipulation is confirmed by at least one indicator.
- Document the decision on the worksheet and proceed to the next section.

3.3 VERIFICATION OF POST-1985 POTENTIAL CONVERSION

The following remote indicators are suggestive (indicates) that a post-1985 potential conversion has occurred.

- Post-1985 imagery/aerial photography showing a manipulation(s).
- NRCS or Farm Service Agency records indicating a post-1985 manipulation(s).
- Producer provided records showing a post-1985 manipulation(s).
- Post-1985 land-based photographs showing a manipulation (e.g. tile inlet/outlet, drainage ditch).
- United States Geological Survey (USGS) NED 10 meter (DEM's) indicating a post-1985 manipulation.
- LIDAR data showing a post-1985 manipulation.
- The most recent year of aerial photography available must be reviewed to determine if a recent potential conversion has occurred.

Post-1985 Potential Conversion Decision Threshold (the factor is met if):

1. The manipulation appears on at least one indicator that is not LIDAR.
 2. The manipulation appears on LIDAR and a second dated indicator.
- Remember, a site visit is required for potential wetland violations.
- Document decision on the worksheet and proceed to the next section.

3.4 VERIFICATION OF POTHOLE LANDFORM

The following remote indicators are suggestive (indicates) that the site is a pothole. **Refer to Attachment B.**

For potholes:

1. Imagery and/or land-based photography shows ponding of water or evidence that ponding occurs in a closed topographic depression¹ in a glaciated upland (non-floodplain, non-drainage way) landscape. The term upland follows the concept from the national Soil Survey Handbook (NSSH).
2. LIDAR shows a closed topographic depression in a glaciated upland landscape position.

¹ A closed depression is one that, prior to any anthropogenic drainage, ponded water.

3. USGS Topographic map or other land survey shows a closed topographic depression in a glaciated upland landscape position.
4. Soil Survey data shows a depression, pothole, or closed topographic depression in a glaciated upland landscape position. Refer to Attachment B for further information.

Pothole Decision Threshold (the factor is met if):

1. The landform appears on at least one remote indicator.

➤ Document decision on the data sheet and proceed to the next section.

3.5 VERIFICATION OF CONSECUTIVE LENGTH (DURATION) OF INUNDATION AND/OR SATURATION DURING THE GROWING SEASON IN MOST YEARS (50% CHANCE OR MORE).

- COMPLETE THIS STEP (3.5) ONLY IF A PRE-1985 MANIPULATION WAS DOCUMENTED IN STEP 3.2.

The following remote indicators are suggestive (indicates) that the duration required to meet the criteria for a specific WC compliance label is met.

1. 1979 through 1986, as available, or further if necessary Farm Service Agency aerial imagery (taken during the growing season as defined in Part 514.2 of the NFSAM) showing wetness signatures.
2. Any other 1986 or earlier, post-manipulation aerial photography such as high altitude black and white photos of suitable scale and quality (taken during the growing season as defined in Part 514.2 of the NFSAM) showing wetness signatures.
3. NRCS records showing field verified manipulation with an assessment of duration such as drainage equations found in Engineering Field Handbook Chapter 19.
 - The saturation indicators as discussed below are indicative of soils having groundwater within 12 inches of the soil surface within the sampling unit. Inundation is defined as the presence of surface water at any depth within the sampling unit.

Inundation and/or Saturation Duration Decision Threshold (the factor is met if):

Producer provided records indicate the authorized drainage has been maintained and wetness signatures are not the result of lack of maintenance. If no producer provided records then the agency expert is to presume maintenance has been conducted and wetness signatures are valid.

For potholes:

1. 1979 through 1986, as available, or further if necessary Farm Service Agency aerial imagery showing wetness signatures indicating saturation and/or inundation on 50 percent or more of the slides reviewed.
2. In addition to the imagery indicated in number 1, as available, any other 1986 or earlier, post-manipulation aerial photography taken during the growing season showing saturation and/or inundation can be used.
3. As required, results of analytical techniques (such as drainage equation(s)) show that saturation would not be removed from the sampling unit within 14 days.

For all other geomorphic settings (landscape positions):

1. 1979 through 1986, as available, or further if necessary Farm Service Agency aerial imagery showing wetness signatures indicating inundation on 50 percent or more of the slides reviewed.
2. In addition to the imagery indicated in number 1, as available, any other 1986 or earlier, post-manipulation aerial photography taken during the growing season showing saturation and/or inundation can be used.
3. As required, results of analytical techniques (such as drainage equation(s)) show that ponding would not be removed from the sampling unit within 15 days.

➤ Document the decision on the worksheet and proceed to the next section.

3.6 VERIFICATION OF PRESENCE OF WOODY VEGETATION AS OF DECEMBER 23, 1985.

The following are indicators that the sampling unit supported woody vegetation on December 23, 1985 (7 CRF 12.2). Woody vegetation is defined as perennial plants with woody stems large enough that normal agricultural cultivation or operations cannot remove.

- Imagery from 1986 that shows the presences of woody vegetation.

Woody Vegetation Presence, as of December 23, 1985, Decision Threshold (the factor is met if):

1. Imagery from 1986 that shows the presence of woody vegetation.

➤ Document the decision on the worksheet and proceed to the next section.

SECTION 4: WETLAND SIZING

4.0 FSA WETLAND DETERMINATION PROCESS STEP 3: DETERMINATION OF SIZE

The agency expert will, as appropriate, further divide or combine the sampling units identified on the base map from Section 2 (Wetland Identification) into labeled polygons for the certified wetland determination map. This decision is based on the answers to the steps in Section 3 (Assignment of WC labels) (e.g. pothole/non-pothole, cropping history, manipulation, hydrology duration).

For example, a sampling unit has the following characteristics:

- Step 1 - Meets all 3 factors and labeled as "Y" (wetland).
- Step 2 - Has pre-1985 cropping history on the west half and no pre-1985 cropping history on the east half (in grass); has a pre-1985 manipulation in it; is a pothole; meets saturation duration.

The sampling unit has different pre-1985 cropping history on the east and west halves, yet all other characteristics (Step 1 and 2 answers) apply to the entire sampling unit. Therefore, the sampling unit should be divided into two labeled polygons for the certified wetland determination map.

The non-wetland polygon will represent the remainder of the project area acres.

4.1 CERTIFIED WETLAND DETERMINATION (CWD) MAP

The agency expert is reminded that size of an area is not part of the wetland criteria; there is no minimum size threshold. The NRCS determined that the labeled polygons on the CWD map are delineated using desktop digitizing methods.

The suggested CWD map size is 1 square mile (section) on 8.5" by 11" paper. Site number and acres will be labeled on the CWD map. A separate site map, at a higher quality scale, may be provided in addition to the labeled CWD map for clarity.

ATTACHMENT A: ECOLOGICAL SITE DESCRIPTION (ESD) INFORMATION

A matrix correlating soil map unit components to an ecological site, meeting the PI indicator, when available, will be filed in Section 3, State Offsite Methods, of the WI Field Office Technical Guide (FOTG).

Where to find ESDs (when available):

- WI EFOTG: 1) Select Section II; 2) Select Statewide Soil and Survey Information; 4) Select a. Ecological Site Descriptions; 5) Select MLRA; 6) Select ESD
- Web Soil Survey: 1) define area of interest; 2) Select Soils Data Explorer Tab; 3) Select Ecological Site Assessment Tab; 4) Select ESD
- Ecological Site Description System / ESIS website: <https://esis.sc.egov.usda.gov/>

Ecological Site Descriptions are based on relative weight of component species, rather than the percent cover measure cited in the Corps Methods. Both measures are viable for determining the ecological significance of the species comprising the plant community. Relative weight is arguably a better measure but was not specified in the Corps Methods because it is not a rapid assessment technique.

ATTACHMENT B: SOILS INFORMATION

WI NRCS will use the definition of pothole as noted below.

1. Pothole – [glacial geology] A type of small pit or closed depression, generally circular or elliptical, occurring in an outwash plain, a recessional moraine, or a till plain; including lake plains.
Note: A closed depression is one that, prior to any anthropogenic drainage, ponded water. Also, generally circular or elliptical does not preclude irregular shapes. Drainage is defined in the FSA Wetland Identification Procedures.

In Wisconsin, potholes may occur in all areas of the state, excluding MLRA 105 Northern Mississippi Loess Hills.

Where to find Landform and hydric soils:

1. Web Soil Survey: 1) Navigate to your area; 2) Define area of interest; 3) Select Soils Data Explorer Tab; 4) Select Soil Reports Tab; 5) Hydric Soils, then click on View Soil Report
2. Official Soil Series Descriptions: <https://soilseries.sc.egov.usda.gov/osdname.aspx>

ATTACHMENT C: HYDROLOGY INFORMATION

Development of National Weather Service Climate Station Rainfall Normalization Tables:

1. National Weather Service (NWS) Climate Stations are taken from the stations listed in *Monthly Station Normals of Temperature, Precipitation, and Heating and Cooling Degree Days 1971-2000* (NOAA Climatology of the United State Report No. 81) and similar reports for Wisconsin.
 - Determine the climate station nearest/most appropriate to the site that has sufficient records to have had statistical information calculated for it (WETS tables).
 - These climate stations are reported and maintained with WETS tables through the NRCS National Water and Climate Center in Portland, Oregon.
2. WETS table information is used to complete the Rainfall Normalization Tables (also called Rainfall Data Sheets) developed for each NWS Climate Station utilized in the Thiessen Polygon Station Zone Map.
 - Climate Stations are listed by the Common Name and Station ID.
 - Other information taken from WETS table:
 - i. Latitude, Longitude
 - ii. County
 - iii. Normal Precipitation for March through September for the 1971-2000 year period.
 - iv. 30% Bounds (Dry and Wet) for March through September for the 1971-2000 year period.
 - v. Actual Precipitation for March through September for all years from 1980 to the current year.
 - Example:
 - i. Common Name: Dodgeville
 - ii. Station ID: WI2173
 - iii. Latitude, Longitude: 42° 57' 38.88", 90° 06' 57.96" (42.9608, -90.1161 in Degrees Decimal Minutes)
 - iv. Normals and Bounds are reported in inches
 - v. Actual Precipitation is reported in inches
3. When data is missing, replacement data is taken from the NWS Climate Station reported in AgACIS WETS tables nearest to the station missing data. The replacement data is clearly identified and referenced on the Rainfall Normalization Table.
 - Example: In 1982, 1983, and 1984, all data was missing for Dodgeville. The Muscoda Station (WI5178) was used for this missing data.
4. The NRCS will utilize the official NWS climate station information.
 - The NWS Climate Stations are used for precipitation normalization due to the data quality and the availability of statistical data.
 - If local and NWS station weather data exists, the NWS station data is used.

- When a climate station no longer collects data or is “discontinued”, a replacement station may be identified for use.
5. The following is the procedure used for the Normalization.
- Determine 30% lower and upper boundaries for antecedent precipitation for the 3 prior months from the WETS table, and assign antecedent monthly weighting factors.
 - Weighting Factors:
 - i. 1st Prior Month = 3
 - ii. 2nd Prior Month = 2
 - iii. 3rd Prior Month = 1
 - Multiply the actual rainfall for each month by the weighting factor.
 - Sum the totals and compare this with the 30% bounds as multiplied with the weighted factor of the same period.
 - Apply a Normalization tag (Wet, Dry, Normal).

Development of NWS Climate Station Zone Map/GIS Layer

1. Each station is located on a map/GIS layer, using its historical Latitude and Longitude as given for the station from 2003 WETS table data.
2. A map/GIS layer of Thiessen Polygons is created from the NWS Climate Station locations so that each station's cell is divided into absolute Thiessen polygons.

Methodology of using Rainfall Normalization Tables

1. Determine the NWS Climate Station (with available slide normalization data) to use for your sampling units.
 - Utilize the Thiessen Polygon Station Zone layer by overlaying the file over the sites' locations in your GIS platform.
 - Choose the predominant station for the sampling unit area.
2. Determine what aerial photographs/images are available.
 - The date (month, year, and day -when available) that the image was captured or processed must be part of the image record.
3. Using the known or estimated date of the images, determine the “Normal” years based on the Rainfall Data Sheets for the selected NWS Climate Station.

The normal years are determined by applying the flight month and year to obtain the slides that have a slide indicator status of “N” or normal. Typically, the previous 3 months before the month of the slide flight are used to categorize the slide; however, if the slide was flown late in the month (e.g., July 22 or later), the month of the flight should be used as one of 3 previous months.

- For example, if a photo was taken on **July 1** then April, May, and June are the 3 prior months that will be used. Therefore, **select July from the Slide Indicator Status** heading of the appropriate rainfall data sheet file because July uses the precipitation from the three previous months of April, May, and June.

- For example, if the slide was flown on **July 22 or later**; then May, June, and July are the 3 previous months that are used. Therefore, select **August from the Slide Indicator Status** heading of the appropriate rainfall data sheet file because August uses the precipitation from the three previous months of May, June, and July
4. Prepare a Remotely Sensed Data form (NRCS-CPA-32W) of normal years.
- Indicate the year, month, and day (if available) of the imagery that has been selected for evaluation on the form.
 - Review the imagery, and record the observed wetness signature using the codes provided on the form (see below).
 - INU: water, mud flat, bare spot, drowned crop
 - CT: dark green, light green, yellow, brown, black (differences in color tone) indicating:
 - i. Stressed crops or sparse canopy (cropland or woodland) due to wetness
 - ii. Difference is vegetation due to different planting dates
 - iii. Inclusions of wet areas as set-aside or ideal land
 - iv. Circular or irregular areas of unharvested crops within a harvested field
 - v. Isolated area that are not farmed with the rest of the field
 - vi. Areas of greener vegetation (especially during dry years).
 - Absence of a wetness signature can be noted with a dash.
5. Determine sampling unit hydrology.
- Count the number of wetness signatures observed for each sampling unit.
 - Divide that total by the number of years reviewed to obtain a ratio or percentage.
 - Record the ratio or percentage on the form.